Orion Crew Exploration Vehicle
Weekly Accomplishments

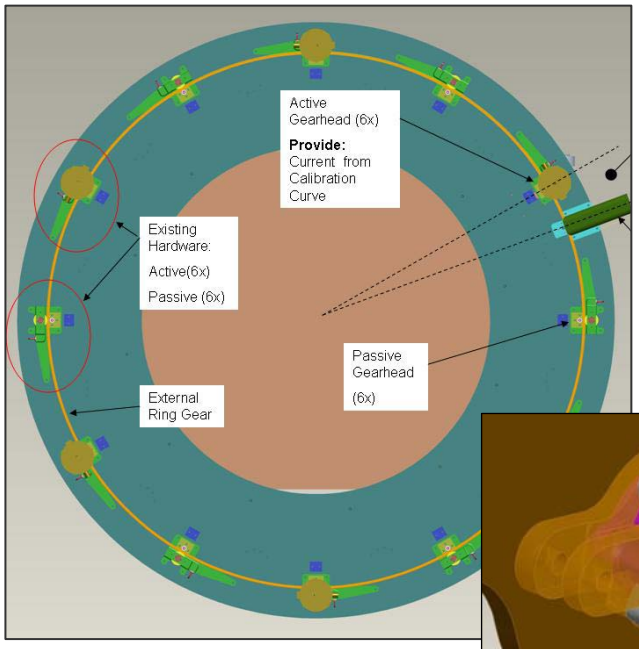
Week ending January 9, 2009

Rotation and lift of the Launch Abort System Pathfinder using was successfully demonstrated at Langley Research Center on January 13. This test was in preparation for operations that will take place in February at the White Sands Missile Range. Personnel from Lockheed Martin were present to observe the activities so that lessons learned can be used for the upcoming operations.

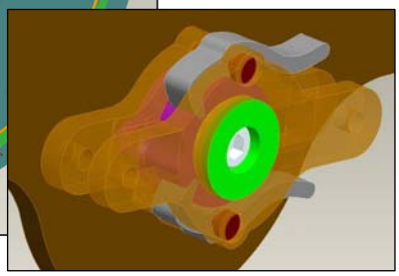
Crew Module Pallet testing calibration tests to generate impact pulses for the Crew Impact Attenuation System (CIAS) of Struts Test Fixture are complete. The 20,000 pound test fixture was dropped onto blocks of paper honeycomb sized to yield pulses of varying magnitude and duration. The accelerometer results from the 15 and 20 fps tests were analyzed to size the honeycomb blocks for future system of struts evaluation tests. The test photos (Page 2, top) show the CIAS test article prior to release and after impact. Note the stacks of paper honeycomb use to generate the impact pulse. In the honeycomb calibration tests the struts and simulated crew-pallet masses were not used. Additional lead masses were added which the crew-pallet mass and struts will replace. The third test (30 fps) will be conducted with the modified lift and release procedure.

The Low Impact Docking System (LIDS) Docking Hatch Window Mockup fabrication is complete (Photo bottom left). The mockup will be is used to evaluate viewing capability into LIDS from the crew module. EDU-58 Guide Petals and integrated design enhancements into the “squeeze and turn” style handles that will be used to lock and release the Guide Petals are complete. See diagram below right. Facility modifications for the new LIDS Electrical EE development lab in building 32A are complete and the next phase of lab setup is in work.

LIDS Docking Hatch Window Mockup



LIDS EDU-58 Ring Gear Test Bed



LIDS EDU-58 Guide Petals

The Pad Abort-1 (PA-1) T-0 electrical door was received at Dryden on January 5. PA-1 T-0 thermal door functional and thermal tests are complete. Vibration testing and testing in one of the two lateral axis directions (on the slip table) is complete.The door was run all the way to random acceptance levels for both open and closed configurations. The PA-1 T-0 Electrical Door is shown in the photo on the right.